SOIL PLANT
NUTRIENT RESEARCH
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NLEAP Publications (compiled April, 2002)

Bartling, P.N.S., M.J. Shaffer, and R.F. Follett. 1993. NLEAP, Western Database, Version 1.2. Soil Science Society of America, Madison, WI.

Bartling, P.N.S., M.J. Shaffer, and R.F. Follett. 1992. NLEAP, Northeast Database, Version 1.2. Soil Science Society of America, Madison, WI.

Bartling, P.N.S., M.J. Shaffer, and R.F. Follett. 1992. NLEAP, Southern Database, Version 1.2. Soil Science Society of America, Madison, WI.

Bartling, P.N.S., M.J. Shaffer, and R.F. Follett. 1991. NLEAP, Upper Midwest Database, Version 1.1. Soil Science Society of America, Madison, WI.

Beckie, H.J., A.P. Moulin, C.A. Campbell, and S.A. Brandt. 1994. Testing effectiveness of four simulation models for estimating nitrates and water in two soils. Canadian Jour. of Soil Sci. 135-143.

Boggia, A. and K.S. Klair. 1995. PLANETOR: the potential to adapt it for Italy. Staff Paper P95-02. University of Minnesota, Department of Applied Economics. 40 pp.

Boyd, J. 1996. Evaluation of management practices for reducing nitrate leaching using field studies and the NLEAP model. M.S. Thesis, Colorado State University, Department of Soil and Crop Sciences, Fort Collins, Co. 120 pp.

Cooke, L. 1991. Computer model helps ensure clean water. Agricultural Research. 39(4):10-12. Conference Proceedings. May 1-3, 1995. Riverside CA. pp. 201-209.

Crookston, M. and G. Hoffner. 1993. Nutrient and Irrigation Management Education Program. Northern Colorado Water Conservancy District. Loveland, CO.

Delgado, J.A., M.K. Brodahl, M.J. Shaffer, R.F. Follett, and J.L. Sharkoff. 1996. A list of definitions to consider when using the NLEAP model to evaluate N management practices in soils containing coarse fragments. NLEAP FACTS Sheet 5/96. USDA-ARS, Fort Collins, CO.

Delgado, J.A., M. Shaffer, and M.K. Brodahl. 1998. New NLEAP for shallow and deep rooted rotations. J. Soil and Water Cons. 53:338-340.

Delgado, J.A., R.F. Follett, J.L. Sharkoff, M.K. Brodahl, and M.J. Shaffer. 1998. NLEAP facts about nitrogen management. J. Soil and Water cons. 53:332-337.

Delgado, J.A., R.F. Follett, and M.J. Shaffer. 2000. Simulation of NO3
--N dynamics for cropping systems with different rooting depths. J. Soil Sci Soc Am. 64:1050-1054.

Delgado, J.A., R.T. Sparks, R.F. Follett, J.L. Sharkoff, and R.R. Riggenbach. 1999a. Use of winter cover crops to conserve soil and water quality in the San Luis Valley of South Central Colorado. pp 125-142.R. Lal (ed.) Soil quality and soil erosion. CRC Press Boca Raton Fl.

Deichert, L.A. and J.M. Hamlett. 1992. Nonpoint ground-water pollution potential in Pennsylvania. ASAE paper number 922531. American Society of Agricultural Engineers, Winter Meeting. Nashville, TN. December 15-18, 1992. 21 pp.

Follett, R.F. 1995. NLEAP model simulation of climate and management effects on N leaching for corn grown on sandy soil. Journal of Contaminant Hydrology. 20:241-252.

Follett, R.F., D.R. Keeney, and R.M. Cruse (eds.). 1991. Managing Nitrogen for Groundwater Quality and Farm Profitability. Soil Science Society of America. Madison, WI, 357 pp.

Follett, R.F., M.J. Shaffer, M.K. Brodahl, and G.A. Reichman. 1994. NLEAP simulation of residual soil nitrate for irrigated and non-irrigated corn. J. Soil and Water Conserv. 49:375-382.

Hall, M. 1996. Simulation of nitrates in a regional subsurface system: Linking surface management with ground water quality. PhD Dissertation, Colorado State University, Department of Earth Sciences, Fort Collins, Co. 165 pp.

Hansen, S., M.J. Shaffer, and H.E. Jensen. 1995. Developments in modeling nitrogen transformations in soil, Chapter 3, pp. 83-107, In Nitrogen Fertilization and the Environment, Marcel Dekker, Inc.

Kaap, J.D., W. Ebert, and M.K. Brodahl. 1995. Using NLEAP to estimate cropland nitrate leaching losses in the central Wisconsin sand plain. Proceedings of Workshop on Computer Applications in Water Management. May 23-25, 1995, Fort Collins, CO. pp. 118-121.

Kaap, J.D., W. Ebert, G. Kraft, and M.K. Brodahl. 1995. NLEAP application for developing municipal wellhead protection strategies in the central Wisconsin sand plain. Proceedings of the Animal Waste and the Land-Water Interface Conference. July 1995. Arkansas Water Resources Center. Fayetteville, AR. 8 pp.

Khakural, B.R. and P.C. Robert. 1993. Soil nitrate leaching potential indices: Using a simulation model as a screening system. J. Environ. Qual. 22:839-845.

Kraft, G. 1995. Does the best management practices approach adequately protect groundwater? A case study. Keeping Current. Central Wisconsin Groundwater Center. March 1995. Pp. 1-2.

Ma, L., and M.J. Shaffer. 2001. Review of carbon and nitrogen processes in nine U.S. soil nitrogen dynamics models. Chapter 4. In M.J. Shaffer et al. (Eds.) Modeling Carbon and Nitrogen Dynamics for Soil Management. CRC Press, Boca Raton, FL.

Ma, L., M.J. Shaffer, and L. Ahuja. 2001. Application of RZWQM for nitrogen management. Chapter 7. In M.J. Shaffer et al. (Eds.) Modeling Carbon and Nitrogen Dynamics for Soil Management. CRC Press, Boca Raton, FL.

Mohtar, R., D. Buckmaster, and S. Fales. 1994. A model for grass growth under grazing system. Proceedings of the ASAE 1994 winter meeting, December 13-16, 1994, Atlanta, GA. ASAE paper number 947525. 32 pp.

Pierce, F.J., M.J. Shaffer, and A.D. Halvorson. 1991. Screening procedure for estimating potentially leachable nitrate-nitrogen below the root zone. Chapter 12, pp. 259-283. In R.F. Follett, et al. (Eds.) Managing Nitrogen for Groundwater Quality and Farm Profitability. Soil Science Society of America, Inc., Madison, WI, 357 pp.

Shaffer, M.J. 2002. Nitrogen modeling for soil management. J. Soil and Water Cons. (In press).

Shaffer, M.J. 1997. NLEAP model for predicting nitrogen efficiency in irrigated cropping systems. Proceedings of the Western Nutrient Management Conference. March 6-7, 1997, Salt Lake City, Utah. p. 198-204.

Shaffer, M.J., A.D. Halvorson, and F.J. Pierce. 1991. Nitrate leaching and economic analysis package (NLEAP): Model description and application. Chapter 13, pp. 285-322 In R.F. Follett, et al. (Eds.) Managing Nitrogen for Groundwater Quality and Farm Profitability. Soil Science Society of America, Inc., Madison, WI, 357 pp.

Shaffer, M.J., B.J. Newton, and C.M. Gross. 2001c. An internet-based simulation model for nitrogen management in agricultural settings. The Scientific World 1:728-736.

Shaffer, M.J. and B.K. Wylie. 1995. Identification and mitigation of nitrate leaching hot spots using NLEAP/GIS technology. Journal of Contaminant Hydrology. 20:253-263.

Shaffer, M.J. and B.K. Wylie. 1994. Identification and mitigation of nitrate leaching hot spots using NLEAP/GIS technology. Transactions of 15th World Congress of Soil Science, July 10-16, 1994, Acapulco, Mexico, Volume 5a: Commission IV: Symposia. pp. 151-164.

Shaffer, M.J. and B.K. Wylie. 1993. Using the NLEAP model and GIS to integrate regional soils, aquifer, climate, and management data in eastern Colorado. Agricultural Research to Protect Water Quality. Proceedings of the Conference, February 21-24, 1993, Minneapolis, MN. Soil and Water Conservation Society, Ankeny, IA. pp. 365-366.

Shaffer, M.J., B.K. Wylie, and M.K. Brodahl. 1994. NLEAP as a predictive tool for regional nitrate leaching in Colorado. 1994 Great Plains Soil Fertility Conference Proceedings, March 7-9, 1994, Denver, CO. pp. 197-202.

Shaffer, M.J., B.K. Wylie, R.F. Follett, and P.N.S. Bartling. 1994. Using climate/weather data with the NLEAP model to manage soil nitrogen. Agricultural and Forest Meteorology. 69:111-123.

Shaffer, M.J. and J.A. Delgado. 2001. Field techniques for modeling nitrogen management. Chapter 15, pp. 391-411. In Follett et al. (eds.) Nitrogen in the Environment: Sources, Problems, and Management.. Elsevier Science B.V.

Shaffer, M.J., K. Lasnik, X. Ou, and R. Flynn. 2001a. NLEAP Internet tools for estimating NO3-N leaching and N2O emissions. Chapter 12. pp. 403-426. In M.J. Shaffer et al. (Eds.) Modeling Carbon and Nitrogen Dynamics for Soil Management. CRC Press, Boca Raton, FL.

Shaffer, M.J. and L. Ma. 2001. Carbon and nitrogen dynamics in upland soils. Chapter 2. In M.J. Shaffer et al. (Eds.) Modeling Carbon and Nitrogen Dynamics for Soil Management. CRC Press, Boca Raton, FL.

Shaffer, M.J., L. Ma, and S. Hansen (eds.) 2001. Modeling Carbon and Nitrogen Dynamics for Soil Management. CRC Press, Boca Raton, FL.

Shaffer, M.J., L. Ma, and S. Hansen. 2001b. Introduction to simulation of carbon and nitrogen dynamics in soils. Chapter 1. pp.1-10. In M.J. Shaffer et al. (Eds.) Modeling Carbon and Nitrogen Dynamics for Soil Management. CRC Press, Boca Raton, FL.

Shaffer, M.J. and M.K. Brodahl. 1998. Rule-based management for simulation in agricultural decision support systems. Computers and Electronics in Agriculture. 21:135-152.

Shaffer, M.J., M.D. Hall, B.K. Wylie, and D.G. Wagner. 1996. NLEAP/GIS approach for identifying and mitigating regional NO3-N leaching. Chapter 17, **In** Application of GIS to the Modeling of Nonpoint Source Pollutants in the Vadose Zone. SSSA Special Publication, American Society of Agronomy, Madison, WI.

Shaffer, M.J., M.D. Hall, R.M. Waskom, and J.K. Boyd. 1995. BMP assessment and regional nitrate leaching hot-spot identification using NLEAP. Proceedings of conference Clean Water-Clean Environment-21st Century, March 5-8, 1995, Kansas City, MO. pp. 203-206.

Shaffer, M.J., M.D. Hall, R.M. Waskom, and J.K. Boyd. 1995. NLEAP/GIS approach for identifying and mitigating regional NO3-N leaching. **In** Applications of GIS to the Modeling of Non-point Source Pollutants in the Vadose Zone. Bouyoucos ASA-CSSA-SSSA

Shaffer, M.J., M.D. Hall, R.M. Waskom, and J.K. Boyd. 1995. NLEAP model for identification and mitigation of regional nitrate leaching hot spots. Proceedings of Workshop on Computer Applications in Water Management. May 23-25, 1995. Fort Collins, CO. Colorado Water Resources Research Institute. Information Series No. 79. pp. 153-156.

Shaffer, M.J., M.K. Brodahl, and B.K. Wylie. 1993. Integration and use of the nitrate leaching and economic package (NLEAP) in the GIS environment. Proceedings of the Federal Interagency Workshop on Hydrologic Modeling Demands for the 90's. June 6-9, 1993, Fort Collins, CO. pp. 5-28- 5-35.

Shaffer, M.J., P.N.S. Bartling, and J. Ascough, II. 2000. Object-oriented simulation of integrated whole farms: GPFARM framework. Computers and Electronics in Agriculture. 28:29-49.

Sharkoff, J.L., J.A. Delgado, R.F. Follett, and R.R. Riggenbach. 1996. Nitrate leaching assessment of San Luis Valley water quality demonstration project sites. Proceedings of 13th Annual Potato/Grain Conference, February 1996. pp. 9-10

Sharkoff, J.L., R.W. Lober, and R.F. Follett. 1995. Nitrate leaching assessment in the San Luis Valley of Colorado. Conference proceedings: Clean Water - Clean Environment - 21st Century. Volume II: Nutrients. March 5-8, 1995, Kansas City, MO. pp. 207-210.

Vining, B. and M.K. Brodahl. 1995. Model selection and use - increasing the chances for success – a user's viewpoint. Proceedings of Workshop on Computer Applications in Water Management. May 23-25, 1995, Fort Collins, CO. pp. 6-10.

Walthall, P.M., W.D. Brady, and R.L. Hutchinson. 1996. Cotton production on the Macon Ridge: how to reduce nitrate leached into drinking water? Louisiana Agriculture. 39(2):5-9.

Wylie, B.K., D.G. Wagner, R.M. Hoffer, S. Maxwell, and M.J. Shaffer. 1993. Spatial Distribution of nitrate leaching "hot spots" and nitrate contributions to the South Platte River basin aquifers. Colorado Water Resources Research Institute Report. Grant No. 14-08-0001-G2008-2, Project No. 06.

Wylie, B.K., M.J. Shaffer, and M.D. Hall, 1995. Regional Assessment of NLEAP NO3-N Leaching Indices. Water Resources Bulletin. 31:399-407.

Wylie, B.K., M.J. Shaffer, M.K. Brodahl, D. Dubois, and D.G. Wagner. 1994. Predicting spatial distributions of nitrate leaching in northeastern Colorado. J. Soil and Water Conserv. 49:288-293.

Schuff, S. 1992. Nitrates can leach but they can't hide. Colorado Rancher and Farmer. 46(14):6-12.

Xu, C., M.J. Shaffer, and M. Al-Kaisi. 1998. Simulating the impact of management practices on nitrous oxide emissions. Soil Sci. Soc. Am. J. 62:736-742.